

NIH272.001NP **AP20 Rec'd PCT/PTO 07 JUN 2006**

## SEQUENCE LISTING

<110> Lai, Ching-Juh  
Purcell, Robert H.

<120> MONOCLONAL ANTIBODIES THAT BIND OR  
NEUTRALIZE DENGUE VIRUS

<130> NIH272.001NP

<140> Unknown

<141> Unknown

<150> PCT/US2004/040674

<151> 2004-12-03

<150> US 60/624261

<151> 2004-11-01

<150> US 60/574492

<151> 2004-05-26

<150> US 60/552528

<151> 2004-03-12

<150> US 60/541676

<151> 2004-02-04

<150> US 60/528161

<151> 2003-12-08

<160> 228

<170> FastSEQ for windows Version 4.0

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Tyr Trp Ser Trp Leu Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
      35          40          45
Gly Tyr Ala His Ser Arg Val Ser Ala Tyr Tyr Asn Pro Ser Leu Lys
      50          55          60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Leu Ser Leu
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Arg Leu Ser Ala Val Thr Ala Ala Asp Thr Ala Leu Tyr Tyr Cys Ala
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 Tyr Asp Ala Ser Thr Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
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 35 40 45  
 Ser Arg Ile Asn Ser Asp Gly Ser Ser Thr Asn Tyr Ala Asp Ser Val  
 50 55 60  
 Glu Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr  
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 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Met Tyr  
 35 40 45  
 Asp Ala Ser Thr Arg Ala Pro Gly Val Pro Ala Arg Phe Ser Gly Ser  
 50 55 60  
 Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu  
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 20 25 30  
 Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Pro Glu Trp Met  
 35 40 45  
 Gly Val Ile Ile Pro Ile Arg Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
 50 55 60  
 Gln Gly Arg Val Thr Tyr Thr Ala Asp Glu Ser Thr Ser Thr Val Tyr  
 65 70 75 80  
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
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 35 40 45  
 Tyr Lys Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
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 20 25 30  
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 35 40 45  
 Met Ser Val Ile Val Pro Ile Val Gly Thr Thr Lys His Ala Gln Lys  
 50 55 60  
 Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala  
 65 70 75 80  
 Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr  
 85 90 95  
 Cys Ala Thr Tyr Arg Arg Tyr Ala Asp Val Ser Ser Tyr Ser Glu Tyr  
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 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
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NIH272.001NP SEQLIST.TXT

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 Asn Thr Tyr Leu Ser Trp Ile Gln Gln Arg Pro Gly Gln Pro Pro Arg  
 35 40 45  
 Leu Leu Ile Tyr Lys Val Ser Asn Arg Asp Ser Gly Val Pro Asp Arg  
 50 55 60  
 Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Lys Ile Thr Arg  
 65 70 75 80  
 Val Glu Ala Glu Asp Val Gly Leu Tyr Tyr Cys Val Gln Gly Val Gln  
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Lys Val Ser Asn Arg Asp Ser  
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20 25 30  
Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Pro Glu Trp Val  
35 40 45  
Ala Leu Ile Lys Lys Asp Gly Ser Glu Lys Tyr Tyr Ala Glu Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr  
65 70 75 80  
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95  
Thr Arg Arg Ile Thr Thr Leu Thr Val Ile Ser Asp Ala Phe Asp Ile  
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115 120

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<212> PRT

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<211> 13

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 Lys Gly

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 Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
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 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile Tyr Lys  
 35 40 45  
 Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp  
 65 70 75 80  
 Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Gly Ser Tyr Pro Leu Thr Phe  
 85 90 95

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 Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr  
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 Val Thr Ile Thr Cys  
                   20

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NIH272.001NP SEQLIST.TXT

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Tyr Trp Ser Trp Leu Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45  
Gly Val Ala His Ser Arg Val Ser Ala Tyr Tyr Asn Pro Ser Leu Lys  
50 55 60  
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Leu Ser Leu  
65 70 75 80  
Arg Leu Ser Ala Val Thr Ala Ala Asp Ala Ala Leu Tyr Tyr Cys Ala  
85 90 95  
Arg Gln Gly Thr Gly Thr Thr Gly Val Ser Glu Asp Pro Phe Asp Leu  
100 105 110  
Trp Gly Gln Gly Thr Lys Val Ile Val Ser Leu  
115 120

<210> 82

<211> 30

<212> PRT

<213> Pan troglodytes

<400> 82

Glu Val Gln Leu Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15  
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser  
20 25 30

<210> 83

<211> 5

<212> PRT

<213> Pan troglodytes

<400> 83

Asp Phe Tyr Trp Ser  
1 5

<210> 84

<211> 13

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<212> PRT

<213> Pan troglodytes

<400> 84

Trp Leu Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile  
1 5 10

<210> 85

<211> 17

<212> PRT

<213> Pan troglodytes

<400> 85

Gly Val Ala His Ser Arg Val Ser Ala Tyr Tyr Asn Pro Ser Leu Lys  
1 5 10 15  
Ser

<210> 86

<211> 30

<212> PRT

<213> Pan troglodytes

<400> 86

Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Leu Ser Leu Arg  
1 5 10 15  
Leu Ser Ala Val Thr Ala Ala Asp Ala Ala Leu Tyr Tyr Cys  
20 25 30

<210> 87

<211> 17

<212> PRT

<213> Pan troglodytes

<400> 87

Ala Arg Gln Gly Thr Gly Thr Thr Gly Val Ser Glu Asp Pro Phe Asp  
1 5 10 15  
Leu

<210> 88

<211> 11

<212> PRT

<213> Pan troglodytes

<400> 88

Trp Gly Gln Gly Thr Lys Val Ile Val Ser Leu  
1 5 10

<210> 89

<211> 107

<212> PRT

<213> Pan troglodytes

<400> 89

Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
1 5 10 15  
Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Arg Leu Asn

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```

      20      25      30
Trp Tyr Gln Gln Lys Pro Gly Gln Gly Pro Lys Phe Leu Met Tyr Asp
      35      40      45
Ala Ser Ser Leu Val Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
      50      55      60
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
65      70      75      80
Phe Ala Val Tyr Tyr Cys Gln Gln Phe Asn Ser Tyr Pro Leu Thr Phe
      85      90      95
Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Thr
      100      105

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<210> 90  
 <211> 21  
 <212> PRT  
 <213> Pan troglodytes

```

<400> 90
Glu Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg
 1      5      10      15
Val Thr Ile Thr Cys
      20

```

<210> 91  
 <211> 11  
 <212> PRT  
 <213> Pan troglodytes

```

<400> 91
Arg Ala Ser Gln Gly Ile Ser Asn Arg Leu Asn
 1      5      10

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<210> 92  
 <211> 15  
 <212> PRT  
 <213> Pan troglodytes

```

<400> 92
Trp Tyr Gln Gln Lys Pro Gly Gln Gly Pro Lys Phe Leu Met Tyr
 1      5      10      15

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<210> 93  
 <211> 7  
 <212> PRT  
 <213> Pan troglodytes

```

<400> 93
Asp Ala Ser Ser Leu Val Ser
 1      5

```

<210> 94  
 <211> 31  
 <212> PRT  
 <213> Pan troglodytes

```

<400> 94
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 1      5      10      15

```

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Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Val Tyr Tyr  
20 25 30

<210> 95  
<211> 10  
<212> PRT  
<213> Pan troglodytes

<400> 95  
Cys Gln Gln Phe Asn Ser Tyr Pro Leu Thr  
1 5 10

<210> 96  
<211> 12  
<212> PRT  
<213> Pan troglodytes

<400> 96  
Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Thr  
1 5 10

<210> 97  
<211> 122  
<212> PRT  
<213> Pan troglodytes

<400> 97  
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser Asp Asn  
20 25 30  
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val Lys  
50 55 60  
Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu  
65 70 75 80  
Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95  
Arg Glu Tyr Cys Thr Gly Asp Thr Cys Phe Ala His Phe Asp Tyr Trp  
100 105 110  
Gly Gln Gly Thr Leu Val Ser Val Ser Ser  
115 120

<210> 98  
<211> 30  
<212> PRT  
<213> Pan troglodytes

<400> 98  
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser  
20 25 30

<210> 99  
<211> 5  
<212> PRT

<213> Pan troglodytes

<400> 99

Asp Asn Val Met His  
1 5

<210> 100

<211> 13

<212> PRT

<213> Pan troglodytes

<400> 100

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
1 5 10

<210> 101

<211> 17

<212> PRT

<213> Pan troglodytes

<400> 101

Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val Lys  
1 5 10 15  
Gly

<210> 102

<211> 30

<212> PRT

<213> Pan troglodytes

<400> 102

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln  
1 5 10 15  
Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
20 25 30

<210> 103

<211> 16

<212> PRT

<213> Pan troglodytes

<400> 103

Ala Arg Glu Tyr Cys Thr Gly Asp Thr Cys Phe Ala His Phe Asp Tyr  
1 5 10 15

<210> 104

<211> 11

<212> PRT

<213> Pan troglodytes

<400> 104

Trp Gly Gln Gly Thr Leu Val Ser Val Ser Ser  
1 5 10

<210> 105

<211> 108

NIH272.001NP SEQLIST.TXT

<212> PRT

<213> Pan troglodytes

<400> 105

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Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1          5          10          15
Asp Thr Val Thr Ile Ala Cys Arg Ala Ser Gln Ser Ile Thr Asn Tyr
          20          25          30
Leu Ser Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
          35          40          45
Tyr His Ala Ser Thr Leu Gln Ser Gly Ile Pro Ser Arg Phe Ser Gly
          50          55          60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65          70          75          80
Asp Asp Phe Ala Thr Tyr Tyr Cys His Tyr Gly Tyr Gly Thr His Thr
          85          90          95
Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr
          100          105

```

<210> 106

<211> 23

<212> PRT

<213> Pan troglodytes

<400> 106

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Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1          5          10          15
Asp Thr Val Thr Ile Ala Cys
          20

```

<210> 107

<211> 11

<212> PRT

<213> Pan troglodytes

<400> 107

```

Arg Ala Ser Gln Ser Ile Thr Asn Tyr Leu Ser
 1          5          10

```

<210> 108

<211> 15

<212> PRT

<213> Pan troglodytes

<400> 108

```

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
 1          5          10          15

```

<210> 109

<211> 7

<212> PRT

<213> Pan troglodytes

<400> 109

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His Ala Ser Thr Leu Gln Ser
 1          5

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<210> 110

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<211> 31  
<212> PRT  
<213> Pan troglodytes

<400> 110  
Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
1 5 10 15  
Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr  
20 25 30

<210> 111  
<211> 9  
<212> PRT  
<213> Pan troglodytes

<400> 111  
Cys His Tyr Gly Tyr Gly Thr His Thr  
1 5

<210> 112  
<211> 12  
<212> PRT  
<213> Pan troglodytes

<400> 112  
Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
1 5 10

<210> 113  
<211> 122  
<212> PRT  
<213> Pan troglodytes

<400> 113  
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser Asp Asn  
20 25 30  
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ala Leu Ile Tyr Ser Ala Asp Ser Thr His Tyr Ala Asp Ser Val Lys  
50 55 60  
Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu  
65 70 75 80  
Gln Met Asp Gly Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95  
Arg Glu Tyr Cys Thr Gly Gly Thr Cys Phe Ala His Phe Asp Tyr Trp  
100 105 110  
Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 114  
<211> 30  
<212> PRT  
<213> Pan troglodytes

<400> 114  
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

NIH272.001NP SEQLIST.TXT

Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser  
20 25 30

<210> 115  
<211> 5  
<212> PRT  
<213> Pan troglodytes

<400> 115  
Asp Asn Val Met His  
1 5

<210> 116  
<211> 13  
<212> PRT  
<213> Pan troglodytes

<400> 116  
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
1 5 10

<210> 117  
<211> 17  
<212> PRT  
<213> Pan troglodytes

<400> 117  
Ala Leu Ile Tyr Ser Ala Asp Ser Thr His Tyr Ala Asp Ser Val Lys  
1 5 10 15  
Gly

<210> 118  
<211> 30  
<212> PRT  
<213> Pan troglodytes

<400> 118  
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln  
1 5 10 15  
Met Asp Gly Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
20 25 30

<210> 119  
<211> 16  
<212> PRT  
<213> Pan troglodytes

<400> 119  
Ala Arg Glu Tyr Cys Thr Gly Gly Thr Cys Phe Ala His Phe Asp Tyr  
1 5 10 15

<210> 120  
<211> 11  
<212> PRT  
<213> Pan troglodytes



NIH272.001NP SEQLIST.TXT

<400> 120  
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
1 5 10

<210> 121  
<211> 108  
<212> PRT  
<213> Pan troglodytes

<400> 121  
Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
1 5 10 15  
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Thr Asn Tyr  
20 25 30  
Leu Ser Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
35 40 45  
Ser Tyr Ser Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60  
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80  
Glu Asp Phe Ala Thr Tyr Tyr Cys His Tyr Gly Tyr Gly Thr His Thr  
85 90 95  
Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr  
100 105

<210> 122  
<211> 23  
<212> PRT  
<213> Pan troglodytes

<400> 122  
Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
1 5 10 15  
Asp Arg Val Thr Ile Thr Cys  
20

<210> 123  
<211> 11  
<212> PRT  
<213> Pan troglodytes

<400> 123  
Arg Ala Ser Gln Ser Ile Thr Asn Tyr Leu Ser  
1 5 10

<210> 124  
<211> 15  
<212> PRT  
<213> Pan troglodytes

<400> 124  
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Ser  
1 5 10 15

<210> 125  
<211> 7  
<212> PRT  
<213> Pan troglodytes

NIH272.001NP SEQLIST.TXT

<400> 125

Tyr Ser Ser Thr Leu Gln Ser  
1 5

<210> 126

<211> 31

<212> PRT

<213> Pan troglodytes

<400> 126

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
1 5 10 15  
Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr  
20 25 30

<210> 127

<211> 9

<212> PRT

<213> Pan troglodytes

<400> 127

Cys His Tyr Gly Tyr Gly Thr His Thr  
1 5

<210> 128

<211> 12

<212> PRT

<213> Pan troglodytes

<400> 128

Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr  
1 5 10

<210> 129

<211> 122

<212> PRT

<213> Pan troglodytes

<400> 129

Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15  
Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser Asp Asn  
20 25 30  
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45  
Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val Lys  
50 55 60  
Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu  
65 70 75 80  
Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95  
Arg Glu Tyr Cys Thr Gly Asp Thr Cys Phe Ala His Phe Asp Tyr Trp  
100 105 110  
Gly Gln Gly Thr Leu Val Ser Val Ser Ser  
115 120

<210> 130

NIH272.001NP SEQLIST.TXT

<211> 30  
 <212> PRT  
 <213> Pan troglodytes

<400> 130  
 Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15  
 Ser Arg Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ile Ser  
 20 25 30

<210> 131  
 <211> 5  
 <212> PRT  
 <213> Pan troglodytes

<400> 131  
 Asp Asn Val Met His  
 1 5

<210> 132  
 <211> 13  
 <212> PRT  
 <213> Pan troglodytes

<400> 132  
 Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 1 5 10

<210> 133  
 <211> 17  
 <212> PRT  
 <213> Pan troglodytes

<400> 133  
 Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val Lys  
 1 5 10 15  
 Gly

<210> 134  
 <211> 30  
 <212> PRT  
 <213> Pan troglodytes

<400> 134  
 Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln  
 1 5 10 15  
 Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
 20 25 30

<210> 135  
 <211> 16  
 <212> PRT  
 <213> Pan troglodytes

<400> 135  
 Ala Arg Glu Tyr Cys Thr Gly Asp Thr Cys Phe Ala His Phe Asp Tyr  
 1 5 10 15

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<210> 136  
 <211> 11  
 <212> PRT  
 <213> Pan troglodytes

<400> 136  
 Trp Gly Gln Gly Thr Leu Val Ser Val Ser Ser  
 1 5 10

<210> 137  
 <211> 106  
 <212> PRT  
 <213> Pan troglodytes

<400> 137  
 Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 Val Thr Ile Thr Cys Arg Ala Ser Gln Thr Ile Thr Asn Tyr Val Ser  
 20 25 30  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Asn Leu Leu Ile Tyr Phe  
 35 40 45  
 Ala Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
 50 55 60  
 Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro Asp Asp  
 65 70 75 80  
 Phe Ala Thr Tyr Tyr Cys Gln Tyr Gly Tyr Gly Thr Gln Thr Phe Gly  
 85 90 95  
 Gln Gly Thr Lys Leu Glu Val Lys Arg Thr  
 100 105

<210> 138  
 <211> 21  
 <212> PRT  
 <213> Pan troglodytes

<400> 138  
 Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly Asp Arg  
 1 5 10 15  
 Val Thr Ile Thr Cys  
 20

<210> 139  
 <211> 11  
 <212> PRT  
 <213> Pan troglodytes

<400> 139  
 Arg Ala Ser Gln Thr Ile Thr Asn Tyr Val Ser  
 1 5 10

<210> 140  
 <211> 15  
 <212> PRT  
 <213> Pan troglodytes

<400> 140  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Asn Leu Leu Ile Tyr

1 5 15

<210> 141  
<211> 7  
<212> PRT  
<213> Pan troglodytes

<400> 141  
Phe Ala Ser Thr Leu His Ser  
1 5

<210> 142  
<211> 31  
<212> PRT  
<213> Pan troglodytes

<400> 142  
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
1 5 10 15  
Leu Thr Ile Asn Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr  
20 25 30

<210> 143  
<211> 9  
<212> PRT  
<213> Pan troglodytes

<400> 143  
Cys Gln Tyr Gly Tyr Gly Thr Gln Thr  
1 5

<210> 144  
<211> 12  
<212> PRT  
<213> Pan troglodytes

<400> 144  
Phe Gly Gln Gly Thr Lys Leu Glu Val Lys Arg Thr  
1 5 10

<210> 145  
<211> 123  
<212> PRT  
<213> Pan troglodytes

<400> 145  
Glu Val Gln Leu Leu Glu Gln Ser Gly Gly Gly Leu Val Gln Pro Gly  
1 5 10 15  
Gly Ser Arg Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Ile Ser Asp  
20 25 30  
Asn Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp  
35 40 45  
Val Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val  
50 55 60  
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr  
65 70 75 80  
Leu Gln Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

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Ala Arg Glu Tyr Cys Thr Gly Gly Thr Cys Phe Ala His Phe Asp Tyr  
 100 105 110  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 146  
 <211> 31  
 <212> PRT  
 <213> Pan troglodytes

<400> 146  
 Glu Val Gln Leu Leu Glu Gln Ser Gly Gly Gly Leu Val Gln Pro Gly  
 1 5 10 15  
 Gly Ser Arg Arg Leu Ser Cys Ala Val Ser Gly Phe Thr Ile Ser  
 20 25 30

<210> 147  
 <211> 5  
 <212> PRT  
 <213> Pan troglodytes

<400> 147  
 Asp Asn Val Met His  
 1 5

<210> 148  
 <211> 13  
 <212> PRT  
 <213> Pan troglodytes

<400> 148  
 Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 1 5 10

<210> 149  
 <211> 17  
 <212> PRT  
 <213> Pan troglodytes

<400> 149  
 Ala Leu Ile Tyr Ser Ala Asp Thr Thr His Tyr Ala Asp Ser Val Lys  
 1 5 10 15  
 Gly

<210> 150  
 <211> 30  
 <212> PRT  
 <213> Pan troglodytes

<400> 150  
 Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln  
 1 5 10 15  
 Met Asp Ser Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
 20 25 30

<210> 151

NIH272.001NP SEQLIST.TXT

<211> 16  
<212> PRT  
<213> Pan troglodytes

<400> 151  
Ala Arg Glu Tyr Cys Thr Gly Gly Thr Cys Phe Ala His Phe Asp Tyr  
1 5 10 15

<210> 152  
<211> 11  
<212> PRT  
<213> Pan troglodytes

<400> 152  
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
1 5 10

<210> 153  
<211> 106  
<212> PRT  
<213> Pan troglodytes

<400> 153  
Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly Asp Thr  
1 5 10 15  
Val Thr Ile Ala Cys Arg Ala Ser Gln Ser Ile Thr Asn Tyr Leu Ser  
20 25 30  
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr His  
35 40 45  
Ala Ser Thr Leu Gln Ser Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly  
50 55 60  
Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp  
65 70 75 80  
Phe Ala Thr Tyr Tyr Cys His Tyr Gly Tyr Gly Thr His Thr Phe Gly  
85 90 95  
Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
100 105

<210> 154  
<211> 21  
<212> PRT  
<213> Pan troglodytes

<400> 154  
Glu Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly Asp Thr  
1 5 10 15  
Val Thr Ile Ala Cys  
20

<210> 155  
<211> 11  
<212> PRT  
<213> Pan troglodytes

<400> 155  
Arg Ala Ser Gln Ser Ile Thr Asn Tyr Leu Ser  
1 5 10

NIH272.001NP SEQLIST.TXT

<210> 156

<211> 15

<212> PRT

<213> Pan troglodytes

<400> 156

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr  
1 5 10 15

<210> 157

<211> 7

<212> PRT

<213> Pan troglodytes

<400> 157

His Ala Ser Thr Leu Gln Ser  
1 5

<210> 158

<211> 31

<212> PRT

<213> Pan troglodytes

<400> 158

Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
1 5 10 15  
Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr  
20 25 30

<210> 159

<211> 9

<212> PRT

<213> Pan troglodytes

<400> 159

Cys His Tyr Gly Tyr Gly Thr His Thr  
1 5

<210> 160

<211> 12

<212> PRT

<213> Pan troglodytes

<400> 160

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
1 5 10

<210> 161

<211> 125

<212> PRT

<213> Pan troglodytes

<400> 161

Glu Val Gln Leu Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
1 5 10 15  
Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Ile Thr Ser Asp  
20 25 30  
His Tyr Phe Trp Ser Trp Met Arg Gln Ala Pro Gly Arg Gly Leu Glu



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```

      35      40      45
Trp Ile Gly Tyr Ile Ser Tyr Arg Gly Thr Thr Tyr Tyr Asn Pro Ser
 50      55      60
Leu Lys Ser Arg Val Thr Met Ser Val Thr Ala Ala Lys Asn Thr Leu
65      70      75      80
Tyr Leu Gln Met Asp Gly Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr
      85      90      95
Cys Ala Arg Ala Ser Val Thr Ala Gly Met Pro Ala Ala Gly Thr Leu
100      105      110
Asp His Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115      120      125

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<210> 162  
 <211> 32  
 <212> PRT  
 <213> Pan troglodytes

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<400> 162
Glu Val Gln Leu Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1      5      10      15
Thr Leu Ser Leu Thr Cys Ala Val Ser Gly Gly Ser Ile Thr Ser Asp
20      25      30

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<210> 163  
 <211> 5  
 <212> PRT  
 <213> Pan troglodytes

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<400> 163
His Tyr Phe Trp Ser
 1      5

```

<210> 164  
 <211> 13  
 <212> PRT  
 <213> Pan troglodytes

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<400> 164
Trp Met Arg Gln Ala Pro Gly Arg Gly Leu Glu Trp Ile
 1      5      10

```

<210> 165  
 <211> 17  
 <212> PRT  
 <213> Pan troglodytes

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<400> 165
Gly Tyr Ile Ser Tyr Arg Gly Thr Thr Tyr Tyr Asn Pro Ser Leu Lys
 1      5      10      15
Ser

```

<210> 166  
 <211> 30  
 <212> PRT  
 <213> Pan troglodytes

<400> 166

NIH272.001NP SEQLIST.TXT

Arg Val Thr Met Ser Val Thr Ala Ala Lys Asn Thr Leu Tyr Leu Gln  
 1 5 10 15  
 Met Asp Gly Leu Arg Pro Glu Asp Thr Ala Val Tyr Tyr Cys  
 20 25 30

<210> 167  
 <211> 17  
 <212> PRT  
 <213> Pan troglodytes

<400> 167  
 Ala Arg Ala Ser Val Thr Ala Gly Met Pro Ala Ala Gly Thr Leu Asp  
 1 5 10 15  
 His

<210> 168  
 <211> 11  
 <212> PRT  
 <213> Pan troglodytes

<400> 168  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 1 5 10

<210> 169  
 <211> 109  
 <212> PRT  
 <213> Pan troglodytes

<400> 169  
 Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Glu  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Asp Ala Ser Ser Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Asn Ser Phe Pro Trp  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
 100 105

<210> 170  
 <211> 23  
 <212> PRT  
 <213> Pan troglodytes

<400> 170  
 Glu Leu Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys  
 20

<210> 171

NIH272.001NP SEQLIST.TXT

<211> 11  
 <212> PRT  
 <213> Pan troglodytes

<400> 171  
 Arg Ala Ser Gln Gly Ile Ser Ser Glu Leu Asn  
 1 5 10

<210> 172  
 <211> 15  
 <212> PRT  
 <213> Pan troglodytes

<400> 172  
 Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr  
 1 5 10 15

<210> 173  
 <211> 7  
 <212> PRT  
 <213> Pan troglodytes

<400> 173  
 Asp Ala Ser Ser Leu Glu Ser  
 1 5

<210> 174  
 <211> 31  
 <212> PRT  
 <213> Pan troglodytes

<400> 174  
 Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
 1 5 10 15  
 Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr  
 20 25 30

<210> 175  
 <211> 10  
 <212> PRT  
 <213> Pan troglodytes

<400> 175  
 Cys Gln His Phe Asn Ser Phe Pro Trp Thr  
 1 5 10

<210> 176  
 <211> 12  
 <212> PRT  
 <213> Pan troglodytes

<400> 176  
 Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
 1 5 10

<210> 177  
 <211> 121

NIH272.001NP SEQLIST.TXT

<212> PRT

<213> Pan troglodytes

<400> 177

Glu Val Gln Leu Leu Glu Glu Ser Gly Ala Glu Val Lys Lys Pro Gly  
 1 5 10 15  
 Ser Ser Val Lys Val Ser Cys Lys Val Ser Gly Gly Thr Phe Ser Arg  
 20 25 30  
 Asn Pro Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp  
 35 40 45  
 Met Gly Val Ile Val Pro Ile Val Gly Thr Thr Lys His Ala Gln Lys  
 50 55 60  
 Phe Gln Gly Arg Val Thr Ile Ile Ala Asp Glu Ser Thr Ser Thr Ala  
 65 70 75 80  
 Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr  
 85 90 95  
 Cys Ala Thr Tyr Tyr Ala Asp Gly Ser Ser Tyr Ser Glu Tyr Trp Gly  
 100 105 110  
 Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 178

<211> 31

<212> PRT

<213> Pan troglodytes

<400> 178

Glu Val Gln Leu Leu Glu Glu Ser Gly Ala Glu Val Lys Lys Pro Gly  
 1 5 10 15  
 Ser Ser Val Lys Val Ser Cys Lys Val Ser Gly Gly Thr Phe Ser  
 20 25 30

<210> 179

<211> 5

<212> PRT

<213> Pan troglodytes

<400> 179

Arg Asn Pro Ile Ser  
 1 5

<210> 180

<211> 13

<212> PRT

<213> Pan troglodytes

<400> 180

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 1 5 10

<210> 181

<211> 18

<212> PRT

<213> Pan troglodytes

<400> 181

Gly Val Ile Val Pro Ile Val Gly Thr Thr Lys His Ala Gln Lys Phe  
 1 5 10 15  
 Gln Gly

NIH272.001NP SEQLIST.TXT

<210> 182  
 <211> 30  
 <212> PRT  
 <213> Pan troglodytes

<400> 182  
 Arg Val Thr Ile Ile Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu  
 1 5 10 15  
 Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 20 25 30

<210> 183  
 <211> 13  
 <212> PRT  
 <213> Pan troglodytes

<400> 183  
 Ala Thr Tyr Tyr Ala Asp Gly Ser Ser Tyr Ser Glu Tyr  
 1 5 10

<210> 184  
 <211> 11  
 <212> PRT  
 <213> Pan troglodytes

<400> 184  
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 1 5 10

<210> 185  
 <211> 114  
 <212> PRT  
 <213> Pan troglodytes

<400> 185  
 Glu Leu Gln Met Thr Gln Ser Pro Leu Ser Leu Ser Val Ala Pro Gly  
 1 5 10 15  
 Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser  
 20 25 30  
 Asp Gly Asn Thr Tyr Leu Phe Trp Tyr Leu Gln Lys Ser Gly Gln Ser  
 35 40 45  
 Pro Gln Leu Leu Ile Tyr Gly Leu Ser Asn Arg Ala Ser Gly Val Pro  
 50 55 60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80  
 Ser Gln Val Glu Ala Glu Asp Val Gly Val Phe Tyr Cys Met Gln Gly  
 85 90 95  
 Thr Gln Leu Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105 110  
 Arg Thr

<210> 186  
 <211> 23  
 <212> PRT  
 <213> Pan troglodytes

NIH272.001NP SEQLIST.TXT

<400> 186  
 Glu Leu Gln Met Thr Gln Ser Pro Leu Ser Leu Ser Val Ala Pro Gly  
   1                  5                  10                  15  
 Gln Pro Ala Ser Ile Ser Cys  
                   20

<210> 187  
 <211> 16  
 <212> PRT  
 <213> Pan troglodytes

<400> 187  
 Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Asn Thr Tyr Leu Phe  
   1                  5                  10                  15

<210> 188  
 <211> 15  
 <212> PRT  
 <213> Pan troglodytes

<400> 188  
 Trp Tyr Leu Gln Lys Ser Gly Gln Ser Pro Gln Leu Leu Ile Tyr  
   1                  5                  10                  15

<210> 189  
 <211> 7  
 <212> PRT  
 <213> Pan troglodytes

<400> 189  
 Gly Leu Ser Asn Arg Ala Ser  
   1                  5

<210> 190  
 <211> 31  
 <212> PRT  
 <213> Pan troglodytes

<400> 190  
 Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
   1                  5                  10                  15  
 Leu Lys Ile Ser Gln Val Glu Ala Glu Asp Val Gly Val Phe Tyr  
                   20                  25                  30

<210> 191  
 <211> 10  
 <212> PRT  
 <213> Pan troglodytes

<400> 191  
 Cys Met Gln Gly Thr Gln Leu Pro Tyr Thr  
   1                  5                  10

<210> 192  
 <211> 12  
 <212> PRT

<213> Pan troglodytes

<400> 192

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr  
1 5 10

<210> 193

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer for sequencing VL segment

<400> 193

acagctatcg cgattgcagt g

21

<210> 194

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer for sequencing VL segment

<400> 194

cacctgatcc tcagatggcg g

21

<210> 195

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer for sequencing VH segment

<400> 195

attgcctacg gcagccgctg g

21

<210> 196

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> primer for sequencing VH segment

<400> 196

ggaagtagtc cttgaccagg c

21

<210> 197

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<400> 197

gacaaaactc acacatgtcc accgtgccca

30

<210> 198

NIH272.001NP SEQLIST.TXT

<211> 23  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 198  
 agtcttggtta ctgagcggat tcc 23  
  
 <210> 199  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> primer  
  
 <400> 199  
 gtttgacagc ttatcatcga taagc 25  
  
 <210> 200  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> control peptide  
  
 <400> 200  
 Gly Ala Met His Ser Ala Leu Ala Gly Ala Thr Glu Val Asp  
 1 5 10  
  
 <210> 201  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> control peptide  
  
 <400> 201  
 Trp Trp Trp Gln Thr Phe Asp Ala Arg  
 1 5  
  
 <210> 202  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> fusion peptide  
  
 <400> 202  
 Asp Arg Gly Trp Gly Asn Gly Ser Gly Leu Phe Gly Lys Gly Gly  
 1 5 10 15  
  
 <210> 203  
 <211> 32  
 <212> PRT



NIH272.001NP SEQLIST.TXT

<213> Flavivirus DENV-2

<400> 203

Arg	Phe	Val	Cys	Lys	His	Ser	Met	Val	Asp	Arg	Gly	Trp	Gly	Asn	Gly
1				5					10					15	
Cys	Gly	Leu	Phe	Gly	Lys	Gly	Gly	Ile	Val	Thr	Cys	Ala	Met	Phe	Thr
			20					25					30		

<210> 204

<211> 32

<212> PRT

<213> Flavivirus DENV-2

<400> 204

Arg	Phe	Val	Cys	Lys	His	Ser	Met	Val	Asp	Arg	Gly	Trp	Gly	Asn	Gly
1				5					10					15	
Cys	Val	Leu	Phe	Gly	Lys	Gly	Gly	Ile	Val	Thr	Cys	Ala	Met	Phe	Thr
			20					25					30		

<210> 205

<211> 32

<212> PRT

<213> Flavivirus DENV-1

<400> 205

Asn	Phe	Val	Cys	Arg	Arg	Thr	Phe	Val	Asp	Arg	Gly	Trp	Gly	Asn	Gly
1				5					10					15	
Cys	Gly	Leu	Phe	Gly	Lys	Gly	Ser	Leu	Ile	Thr	Cys	Ala	Lys	Phe	Lys
			20					25					30		

<210> 206

<211> 32

<212> PRT

<213> Flavivirus DENV-3

<400> 206

Asn	Tyr	Val	Cys	Lys	His	Thr	Tyr	Val	Asp	Arg	Gly	Trp	Gly	Asn	Gly
1				5					10					15	
Cys	Gly	Leu	Phe	Gly	Lys	Gly	Ser	Leu	Val	Thr	Cys	Ala	Lys	Phe	Gln
			20					25					30		

<210> 207

<211> 32

<212> PRT

<213> Flavivirus DENV-4

<400> 207

Gln	Tyr	Ile	Cys	Arg	Arg	Asp	Val	Val	Asp	Arg	Gly	Trp	Gly	Asn	Gly
1				5					10					15	
Cys	Gly	Leu	Phe	Gly	Lys	Gly	Gly	Val	Val	Thr	Cys	Ala	Lys	Phe	Ser
			20					25					30		

<210> 208

<211> 32

<212> PRT

<213> Flavivirus WNV

<400> 208

NIH272.001NP SEQLIST.TXT

Ala Phe Val Cys Arg Gln Gly Val Val Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Leu Phe Gly Lys Gly Ser Ile Asp Thr Cys Ala Lys Phe Ala  
 20 25 30

<210> 209  
 <211> 32  
 <212> PRT  
 <213> Flavivirus JEV

<400> 209  
 Ser Tyr Val Cys Lys Gln Gly Phe Thr Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Leu Phe Gly Lys Gly Ser Ile Asp Thr Cys Ala Lys Phe Ser  
 20 25 30

<210> 210  
 <211> 32  
 <212> PRT  
 <213> Flavivirus JEV SA14-14-2

<400> 210  
 Ser Tyr Val Cys Lys Gln Gly Phe Thr Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Phe Phe Gly Lys Gly Ser Ile Asp Thr Cys Ala Lys Phe Ser  
 20 25 30

<210> 211  
 <211> 32  
 <212> PRT  
 <213> Flavivirus SLEV

<400> 211  
 Thr Phe Val Cys Lys Arg Asp Val Val Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Leu Phe Gly Lys Gly Ser Ile Asp Thr Cys Ala Lys Phe Thr  
 20 25 30

<210> 212  
 <211> 32  
 <212> PRT  
 <213> Flavivirus YFV Asibi

<400> 212  
 Asp Asn Ala Cys Lys Arg Thr Tyr Ser Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Leu Phe Gly Lys Gly Ser Ile Val Ala Cys Ala Lys Phe Thr  
 20 25 30

<210> 213  
 <211> 32  
 <212> PRT  
 <213> Flavivirus YFV 17d

<400> 213  
 Asp Asn Ala Cys Lys Arg Thr Tyr Ser Asp Arg Gly Trp Gly Asn Gly  
 1 5 10 15  
 Cys Gly Leu Phe Gly Lys Gly Ser Ile Val Ala Cys Ala Lys Phe Thr

20

25

30

<210> 214  
<211> 32  
<212> PRT  
<213> Flavivirus LGTV

<400> 214  
Gly Thr Val Cys Lys Arg Asp Gln Ser Asp Arg Gly Trp Gly Asn His  
1 5 10 15  
Cys Gly Leu Phe Gly Lys Gly Ser Ile Val Thr Cys Val Lys Phe Thr  
20 25 30

<210> 215  
<211> 32  
<212> PRT  
<213> Flavivirus TBEV

<400> 215  
Gly Thr Val Cys Lys Arg Asp Gln Ser Asp Arg Gly Trp Gly Asn His  
1 5 10 15  
Cys Gly Leu Phe Gly Lys Gly Ser Ile Val Ala Cys Val Lys Ala Ala  
20 25 30

<210> 216  
<211> 21  
<212> PRT  
<213> Flavivirus DENV-2

<400> 216  
Phe Lys Val Val Lys Glu Ile Ala Glu Thr Gln His Gly Thr Ile Val  
1 5 10 15  
Ile Arg Val Gln Tyr  
20

<210> 217  
<211> 21  
<212> PRT  
<213> Flavivirus DENV-2

<400> 217  
Phe Lys Val Val Lys Glu Ile Ala Glu Thr Gln Gln Gly Thr Ile Val  
1 5 10 15  
Ile Arg Val Gln Tyr  
20

<210> 218  
<211> 21  
<212> PRT  
<213> Flavivirus DENV-1

<400> 218  
Phe Lys Leu Glu Lys Glu Val Ala Glu Thr Gln His Gly Thr Val Leu  
1 5 10 15  
Val Gln Val Lys Tyr  
20

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<210> 219

<211> 21

<212> PRT

<213> Flavivirus DENV-3

<400> 219

Phe Val Leu Lys Lys Glu Val Ser Glu Thr Gln His Gly Thr Ile Leu  
 1 5 10 15  
 Ile Lys Val Glu Tyr  
 20

<210> 220

<211> 21

<212> PRT

<213> Flavivirus DENV-4

<400> 220

Phe Ser Ile Asp Lys Glu Met Ala Glu Thr Gln His Gly Thr Thr Val  
 1 5 10 15  
 Val Lys Val Lys Tyr  
 20

<210> 221

<211> 21

<212> PRT

<213> Flavivirus WNV

<400> 221

Phe Lys Phe Leu Gly Thr Pro Ala Asp Thr Gly His Gly Thr Val Val  
 1 5 10 15  
 Leu Glu Leu Gln Tyr  
 20

<210> 222

<211> 21

<212> PRT

<213> Flavivirus JEV

<400> 222

Phe Ser Phe Ala Lys Asn Pro Ala Asp Thr Gly His Gly Thr Val Val  
 1 5 10 15  
 Ile Glu Leu Thr Tyr  
 20

<210> 223

<211> 21

<212> PRT

<213> Flavivirus JEV SA14-14-2

<400> 223

Phe Ser Phe Ala Lys Asn Pro Ala Asp Thr Gly His Gly Thr Val Val  
 1 5 10 15  
 Ile Glu Leu Thr Tyr  
 20

<210> 224

<211> 21

<212> PRT

<213> Flavivirus SLEV

<400> 224

Phe Thr Phe Ser Lys Asn Pro Thr Asp Thr Gly His Gly Thr Val Ile  
 1 5 10 15  
 Val Glu Leu Gln Tyr  
 20

<210> 225

<211> 21

<212> PRT

<213> Flavivirus YFV Asibi

<400> 225

Met Phe Phe Val Lys Asn Pro Asp Thr Thr Gly His Gly Thr Val Val  
 1 5 10 15  
 Met Gln Val Lys Val  
 20

<210> 226

<211> 21

<212> PRT

<213> Flavivirus YFV 17d

<400> 226

Met Phe Phe Val Lys Asn Pro Asp Thr Thr Gly His Gly Thr Val Val  
 1 5 10 15  
 Met Gln Val Lys Val  
 20

<210> 227

<211> 21

<212> PRT

<213> Flavivirus LGTV

<400> 227

Phe Thr Trp Lys Arg Ala Pro Thr Asp Ser Gly His Asp Thr Val Val  
 1 5 10 15  
 Met Glu Val Gly Phe  
 20

<210> 228

<211> 21

<212> PRT

<213> Flavivirus TBEV

<400> 228

Phe Thr Trp Lys Arg Ala Pro Thr Asp Ser Gly His Asp Thr Val Val  
 1 5 10 15  
 Met Glu Val Thr Phe  
 20